

Observations of Comet c, 1881. By T. W. Backhouse, Esq.

1881. Time.	Brightness of Head.	Length of Tail.	Width of Tail.	Central Line of Tail.		Hindrances.
				passes, or points to	at distance from Nucleus, Obser	
July 27, 12 10		1 $\frac{1}{4}$ °		at angle of 15° above β Aur.	n. e.	Twilight.
12 20		1°			(38)	"
		1 $\frac{1}{2}$ °			(20)	"
12 25	= 55 Auri.; slightly fainter than 56.	2.7°	0.7°	$\frac{2}{3}$ (β , π) Aur.	(25)	"
29, 12 17	= 21 Lynceis.	5.8°			n. e.	
12 25		6 $\frac{1}{2}$ °	1°	$\frac{2}{3}$ (41, 36) Aur.	(25)	
Aug. 4, 12 50		6 $\frac{3}{4}$ °	$\frac{2}{3}$ °	$\frac{1}{3}$ ° north of 46 Aur.	6° n. e.	Twilight.
12 55				at angle of 15° north of 57 Aur.	(3.5)	"
5, 12 23					(20)	Haze.
12 25	Considerably brighter than 21 Lyn.	shorter than on 4h.		11' at 1° off nuc.	n. e.	"
9, 13 15	Ditto, and rather fainter than κ Urs. Maj.†	$\frac{7}{8}$ °			(3.5)	Moon.
13 25	Just visible.				n. e.	"

Nov. 1881.

Comet c, 1881.

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1881. Time.	Brightness of Head.	Length of Tail.	Width of Tail.	Central Line of Tail.		Mode of Nucleus, Obser.	Hindrances.
				passes, or points to	at distance from Nucleus.		
Aug. 10. 10 40		2°				(3.5)	Moon.
11 0		1°				(20)	"
14, 10 50	Rather fainter than θ Urs. Maj.	4 $\frac{3}{4}$ °				n. e.	Not very clear.
18, 10 0	" brighter "	8 $\frac{1}{2}$ °	1 $\frac{1}{2}$ °	about $\frac{1}{2}$ ° f ν Urs. Maj.	8 $\frac{1}{2}$ °	"	{ Town smoke and light.
"				229 P. ix.	3 $\frac{1}{2}$ °	(3.5)	
10 50			12' at 12' off nucleus; also at 95' off.			(20)	
12 15			16' at 12' off nucleus.				Moon.
19, 13 10		10 $\frac{1}{4}$ °	1 $\frac{1}{2}$ °			n. e.	"
"				36 Urs. Maj.	5°	(3.5)	"
20, 9 40	Considerably brighter than θ or ψ Urs. Maj.					n. e.	Twilight.
10 15		8°	1 $\frac{1}{2}$ °	β Urs. Maj.	8°	specs.	Town (?) light.
7, 8 21	(Invisible with naked eye.)	3°	1°	11 (37, 41) Com.		(3.5)	Twilight.
8 40	Much brighter than β Comæ.					n. e.	"
28, 8 49	Not quite = η Boötis.*	2 $\frac{3}{4}$ °	1°	slightly <i>np.</i> 14 P. xiii.		(3.5)	"

* Means that the object, compared with Comet c, was more favourably situated; † less so.

My observations on this Comet were made at Sunderland. The accompanying table gives the brightness of its head—*i.e.* of the nucleus and the surrounding nebulosity; the length and width of the tail, the greatest width being given unless anything is said to the contrary; and the direction of the tail—*i.e.* of the central or brightest line, as measured from the nucleus. When the tail was curved, the next column gives the part to which the direction refers. The last column but one gives the mode of observation, n. e. indicating the naked eye; specs., spectacles to correct my short sight (which usually made no perceptible difference); (3.5), opera-glasses, power 3.5, aperture $1\frac{1}{2}$ in.; (2.5), a smaller pair of opera-glasses; and (20) and (38), these powers of my $4\frac{1}{4}$ -in. achromatic. On each night I have given the results of the best mode of observation for that night. The last column gives the more important hindrances to a perfect view. Of course the low altitude of the Comet prevented it from ever being seen so clearly as if it were high up.

The latter part of the time of the Comet's apparition the weather was unusually cloudy.

The measurements are all taken from my drawings, or otherwise estimated.

Remarks on the Tail.

July 27.—Straight.

July 31.—Slightly curved, concave to south (2.5).

August 4.—Strongly curved (n. e.).

August 14.—I believe, slightly curved, concave to *sp*.

August 18.—Curvature not certain with naked eye, but slight with (3.5).

August 19, 13^h 10^m.—Slightly curved near the nucleus, concave to *p*, as seen with opera-glasses. With the naked eye it is straight, but as the *f* edge extends much further than the *p* edge, it has the appearance of a slight curvature, concave to *f* 37 *Urs. Maj.* just within the *f* edge.

August 20, 10^h 15^m.—Straight. I believe I can see it nearly to a *Urs. Maj.*, but am sure of it only to near β . There is a broad extension of the tail on the *p* side in its southern half.

August 28, 8^h 49^m.—Straight. The *sf* edge most definite; 14 P. xiii just within it.

Telescopic Notes.

August 18, 10^h 50^m.—From near the nucleus to a distance of a degree from it, the brightest part of the Comet is a narrow ray, almost straight, only 1' or 2' wide. Preceding this the tail is very faint, except near the nucleus, and at a distance of 1° or 1½° from the nucleus fades out altogether, the *p* edge of the tail being, beyond that, almost a continuation of the narrow ray.